

SEQUENCE.TXT
SEQUENCE LISTING

<110> Tours Nestlé Research Center

<120> Implication Of Proteinase And Proteinase Inhibitor In Coffee Flavour

<130> Patent Proteinase and Proteinase Inhibitor Coffee

<160> 16

<170> PatentIn version 3.1

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<222> (1)..(1543)

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<222> (122)..(1315)

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<213> Coffea canephora

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Ile Gln Tyr Arg Val Gln Asp Pro Leu Met Ile Arg Gln Val Thr Asp

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Pro Ser Ala 115	Ile His Gly Val Thr 120	Gln Phe Ser Asp Leu 125
Thr Glu Glu		
Glu Phe 130	Glu Ala Thr Tyr Met 135	Gly Leu Lys Gly Gly 140
Ala Gly Val Gly		
Gly Thr Thr Gln Leu 145	Gly Lys Asp Asp Gly 155	Asp Glu Ser Ala Ala 160
Glu		
Val Met Met Asp 165	Val Ser Asp Leu Pro 170	Glu Ser Phe Asp Trp 175
Arg Glu		
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Ser Cys		
Trp Ala Phe 195	Ser Thr Thr Gly Ala 200	Ile Glu Gly Ala Asn 205
Phe Ile Ala		
Thr Gly 210	Lys Leu Leu Ser Leu 215	Ser Glu Gln Gln Leu 220
Val Asp Cys Asp		
His Met Cys Asp 225	Leu Lys Glu Lys Asp 230	Asp Cys Asp Asp Gly 235
Cys Ser		
Gly Gly Leu Met 245	Thr Thr Ala Phe Asn 250	Tyr Leu Ile Glu Ala 255
Gly Gly		
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Glu Cys		
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Phe Ala Lys		

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Ile Pro Glu Asp Glu Ser Gln Ile Ala Ala Asn Val Val His Asn Gly
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Pro Leu Ala Ile Gly Leu Asn Ala Val Phe Met Gln Thr Tyr Ile Gly
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Gly Val Ser Cys Pro Leu Ile Cys Asp Lys Lys Arg Ile Asn His Gly
 325 330 335

Val Leu Leu Val Gly Tyr Gly Ser Arg Gly Phe Ser Ile Leu Arg Leu
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Leu Gln Val Asn Ala Leu Gly Arg Lys Val Gly Ala Arg Glu Lys Ile			
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Glu Asp Val Lys Ser Asn Lys Glu Val Gln Glu Leu Gly Glu Tyr Cys			
gtt tct gag tac aac aag agt ttg cgg aag aag aac aac gaa agt ggt	60 65	70	303
Val Ser Glu Tyr Asn Lys Ser Leu Arg Lys Lys Asn Asn Glu Ser Gly			
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Tyr Leu Lys Ile Lys Ala Thr Thr Ser Ser Gly Val Pro Lys Val Tyr
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Thr Tyr Gly Asp Gly Ser Ser Thr Gly Gly Tyr Phe Val Arg Asp Tyr	
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 180 185 190

Asp Gly Ile Asn Gly Gly Gly Ile Phe Ala Ile Gly Gln Val Val Gln
 195 200 205

Pro Lys Leu Lys Thr Thr Pro Leu Val Pro Asn Glu Ala His Tyr Asn
 210 215 220

Val Val Leu Asn Ala Ile Glu Val Gly Gly Asp Val Leu Asn Leu Pro
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Ser Asp Val Leu Gly Gly Gly Ser Gly Ser Gly Thr Ile Ile Asp Ser
 245 250 255

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 260 265 270

Glu Lys Ile Thr Ala Ser Gln Ser Asn Leu Lys Ile His Ile Val Glu
 275 280 285

Asn Gln Phe Lys Cys Phe Val Tyr Ser Gly Asn Val Asp Asp Gly Phe
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Pro Val Val Ser Phe His Phe Glu Asp Ser Leu Ser Leu Thr Val Tyr
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Pro His Glu Tyr Leu Phe Asp Leu His Asp Asp Gln Trp Cys Ile Gly
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Trp Gln Asn Lys Gly Met Gln Thr Arg Asp Gly Arg Glu Val Thr Leu
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 355 360 365

Asn Gln Thr Ile Gly Trp Ala Glu Tyr Asn Cys Ser Ser Ser Ile Lys
 370 375 380

Leu Arg Asp Glu Lys Ser Gly Asn Val Tyr Ala Val Gly Ser His Ile
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Lys Arg Ile Ser Leu Lys Lys Lys Pro Leu Asp Ile Gln Ser Ile Arg	
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Ala Ala Lys Leu Ala His Leu Glu Ser Thr His Gly Ala Gly Arg Lys	
45 50 55	
gag atg gac aac aat tta ggc agt tcc aat gag gac ata ttg cct tta	303
Glu Met Asp Asn Asn Leu Gly Ser Ser Asn Glu Asp Ile Leu Pro Leu	
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tcc Ser	aag Lys 125	tac Tyr	aag Lys	gca Ala	aag Lys	aag Lys 130	tca Ser	agt Ser	act Thr	tat Tyr	aca Thr 135	gcc Ala	ata Ile	ggg Gly	aaa Lys
tct Ser 140	tgt Cys	tca Ser	att Ile	cgt Arg	tat Tyr 145	ggg Gly	tct Ser	gga Gly	tca Ser	att Ile 150	tct Ser	gga Gly	ttc Phe	tcc Ser	agt Ser 155
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gac Asp	ggg Gly	ata Ile 190	ctt Leu	ggc Gly	ctt Leu	gga Gly	ttc Phe 195	cag Gln	gag Glu	atc Ile	gct Ala	gtt Val 200	gat Asp	aac Asn	atg Met
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gta Val 220	ttc Phe	tct Ser	ttc Phe	tgg Trp	ctt Leu 225	aac Asn	cgc Arg	gac Asp	cca Pro	aat Asn 230	gct Ala	gaa Glu	gac Asp	gga Gly	ggg Gly 235
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aca Thr	tat Tyr	gtt Val	cct Pro 255	gta Val	act Thr	cag Gln	aag Lys	gga Gly 260	tac Tyr	tgg Trp	caa Gln	ttt Phe	aaa Lys 265	atg Met	gga Gly
gat Asp	ttt Phe	ctc Leu 270	att Ile	ggg Gly	aac Asn	gtc Val	tca Ser 275	aca Thr	ggc Gly	ttt Phe	tgt Cys	gaa Glu 280	gga Gly	ggg Gly	tgt Cys
gct Ala	gct Ala 285	att Ile	gtg Val	gac Asp	tct Ser	gga Gly 290	aca Thr	tcg Ser	ttg Leu	ctc Leu	gct Ala 295	ggg Gly	cca Pro	act Thr	act Thr
gtt Val 300	gtg Val	act Thr	caa Gln	att Ile	aat Asn 305	cat His	gcc Ala	att Ile	gga Gly	gct Ala 310	gaa Glu	gga Gly	gta Val	gtt Val	agc Ser 315
act Thr	gaa Glu	tgt Cys	aaa Lys	gaa Glu 320	att Ile	gtt Val	tca Ser	cag Gln	tat Tyr 325	ggg Gly	gaa Glu	ctg Leu	att Ile	tgg Trp 330	gat Asp

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tta	tgt	ccc	ctt	cgt	ggt	gct	cag	cat	gag	aat	gct	tat	atc	aag	tca	1167
Leu	Cys	Pro	Leu	Arg	Gly	Ala	Gln	His	Glu	Asn	Ala	Tyr	Ile	Lys	Ser	
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Met	Cys	Thr	Ala	Cys	Glu	Met	Ala	Val	Val	Trp	Met	Gln	Asn	Gln	Leu	
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Lys	Gln	Gln	Gly	Thr	Lys	Glu	Lys	Val	Leu	Ala	Tyr	Val	Asn	Gln	Leu	
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Cys	Glu	Ser	Ile	Pro	Ser	Pro	Met	Gly	Glu	Ser	Ile	Ile	Asp	Cys	Asn	
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Ser	Leu	Ser	Thr	Leu	Pro	Asn	Val	Ser	Phe	Thr	Ile	Gly	Gly	Lys	Ser	
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Phe	Glu	Leu	Thr	Leu	Lys	Glu	Tyr	Val	Leu	Arg	Thr	Gly	Glu	Gly	Phe	
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Ala	Glu	Val	Cys	Ile	Ser	Gly	Phe	Met	Ala	Met	Asp	Val	Pro	Pro	Pro	
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cgt	ggt	ccc	atc	tgg	gtt	ctg	gga	gat	gtg	ttc	atg	gga	gtg	tac	cac	1551
Arg	Gly	Pro	Ile	Trp	Val	Leu	Gly	Asp	Val	Phe	Met	Gly	Val	Tyr	His	
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Thr	Val	Phe	Asp	Tyr	Gly	Asn	Leu	Arg	Met	Gly	Phe	Ala	Arg	Ala	Ala	
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<210> 8

<211> 507

<212> PRT

<213> Coffea canephora

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SEQUENCE.TXT

<400> 8

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20      25      30
Lys Lys Lys Pro Leu Asp Ile Gln Ser Ile Arg Ala Ala Lys Leu Ala
35      40      45
His Leu Glu Ser Thr His Gly Ala Gly Arg Lys Glu Met Asp Asn Asn
50      55      60
Leu Gly Ser Ser Asn Glu Asp Ile Leu Pro Leu Lys Asn Tyr Leu Asp
65      70      75      80
Ala Gln Tyr Tyr Gly Glu Ile Gly Ile Gly Thr Pro Pro Gln Lys Phe
85      90      95
Thr Val Ile Phe Asp Thr Gly Ser Ser Asn Leu Trp Val Pro Ser Ala
100      105      110
Lys Cys Tyr Phe Ser Ile Ala Cys Trp Leu His Ser Lys Tyr Lys Ala
115      120      125
Lys Lys Ser Ser Thr Tyr Thr Ala Ile Gly Lys Ser Cys Ser Ile Arg
130      135      140
Tyr Gly Ser Gly Ser Ile Ser Gly Phe Ser Ser Gln Asp Asn Val Glu
145      150      155      160
Val Gly Asp Leu Val Val Lys Asp Gln Val Phe Ile Glu Ala Ser Arg
165      170      175
Glu Gly Ser Leu Thr Phe Val Ile Ala Lys Phe Asp Gly Ile Leu Gly
180      185      190
Leu Gly Phe Gln Glu Ile Ala Val Asp Asn Met Val Pro Val Trp Tyr
195      200      205
Asn Met Val Asp Gln Gly Leu Val Asp Glu Gln Val Phe Ser Phe Trp
210      215      220
Leu Asn Arg Asp Pro Asn Ala Glu Asp Gly Gly Glu Leu Val Phe Gly
225      230      235      240
Gly Val Asp Thr Asn His Phe Lys Gly Lys His Thr Tyr Val Pro Val

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Asn	Val	Ser 275	Thr	Gly	Phe	Cys	Glu 280	Gly	Gly	Cys	Ala	Ala 285	Ile	Val	Asp								
Ser	Gly 290	Thr	Ser	Leu	Leu	Ala 295	Gly	Pro	Thr	Thr	Val 300	Val	Thr	Gln	Ile								
Asn 305	His	Ala	Ile	Gly	Ala 310	Glu	Gly	Val	Val	Ser 315	Thr	Glu	Cys	Lys	Glu 320								
Ile	Val	Ser	Gln	Tyr 325	Gly	Glu	Leu	Ile	Trp 330	Asp	Leu	Leu	Val	Ser 335	Gly								
Val	Leu	Pro	Asp 340	Arg	Val	Cys	Lys	Gln 345	Ala	Gly	Leu	Cys	Pro 350	Leu	Arg								
Gly	Ala	Gln 355	His	Glu	Asn	Ala	Tyr 360	Ile	Lys	Ser	Val	Val 365	Asp	Glu	Glu								
Asn	Lys 370	Glu	Glu	Ala	Ser	Val 375	Gly	Glu	Ser	Pro	Met 380	Cys	Thr	Ala	Cys								
Glu 385	Met	Ala	Val	Val	Trp 390	Met	Gln	Asn	Gln	Leu 395	Lys	Gln	Gln	Gly	Thr 400								
Lys	Glu	Lys	Val	Leu 405	Ala	Tyr	Val	Asn	Gln 410	Leu	Cys	Glu	Ser	Ile 415	Pro								
Ser	Pro	Met	Gly 420	Glu	Ser	Ile	Ile	Asp 425	Cys	Asn	Ser	Leu	Ser 430	Thr	Leu								
Pro	Asn	Val 435	Ser	Phe	Thr	Ile	Gly 440	Gly	Lys	Ser	Phe	Glu 445	Leu	Thr	Leu								
Lys	Glu 450	Tyr	Val	Leu	Arg	Thr 455	Gly	Glu	Gly	Phe	Ala 460	Glu	Val	Cys	Ile								
Ser 465	Gly	Phe	Met	Ala	Met 470	Asp	Val	Pro	Pro	Pro 475	Arg	Gly	Pro	Ile	Trp 480								
Val	Leu	Gly	Asp	Val 485	Phe	Met	Gly	Val	Tyr 490	His	Thr	Val	Phe	Asp 495	Tyr								

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Gly Asn Leu Arg Met Gly Phe Ala Arg Ala Ala
 500 505

SEQUENCE.TXT

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 <211> 726
 <212> DNA
 <213> Coffea canephora

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 cagtgaatct aagggcaatg agaacagcct tgaaattgag agcctggcta agtttgctgt 180
 ggatgattac aacaagaaac agaatgccct tttggaattt cagaagggtga tcaacagtaa 240
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 gaagaagctt tatgaggcca aagtttgggt gaagccatgg ttgaacttca aggaggttca 360
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 ggagtttcaa acatgcttag tttgtatatg ctataactcg taatattaac atgttagtaa 540
 catgttatct tatgttggat agatgttaag accaacataa tcttcgctga tgttcggttc 600
 gatgtgatct gatcctgtgg tttttatacc actctggctt gagtatcatt acccttagtc 660
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 aaaaaa 726

<210> 10
 <211> 98
 <212> PRT
 <213> Coffea canephora

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 20 25 30
 Lys Gln Asn Ala Leu Leu Glu Phe Gln Lys Val Ile Asn Ser Lys Glu

SEQUENCE.TXT

35

40

45

Gln Val Val Ala Gly Thr Val Tyr Tyr Leu Thr Ile Glu Val Lys Asp
 50 55 60

Gly Asn Glu Lys Lys Leu Tyr Glu Ala Lys Val Trp Val Lys Pro Trp
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Leu Asn Phe Lys Glu Val Gln Glu Phe Lys Pro Ala Ala Gly Asp Thr
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Ser Ala

<210> 11

<211> 688

<212> DNA

<213> Coffea canephora

<400> 11

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ccaccctggc agctatctgt cttttctccg acgtcccttc cgcggctttg ggtggctgcc      180
ccaaagatgc cttagtcggc ggttgagta aggtgaccc caaggacca gaggtgctag      240
agaacggaaa atttgccata gatgagcaca acaaggaggc cgttaccaag ttggagtta      300
aaactgtggt ggaggcgag aagcaagtgg tggccggcac aaattacaag attgtgataa      360
aggcattgga tggcactgct tcaaactctgt acgaggccat tgtttgggtc aagccctggc      420
tcaaattcaa gaagcttact tccttcagga aacttccctg atcagattta aggggatgta      480
ataagcatgt gcatttcttg cttaaaactg tggcatgaga ggtgtatgta taatcatctg      540
tatttcttgc ttaaaactgt ggtatgacta tgagagatgt ttgaagtgta ctgtactaca      600
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<211> 124

<212> PRT

<213> Coffea canephora

SEQUENCE.TXT

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Lys Asp Ala Leu Val Gly Gly Trp Ser Lys Ala Asp Pro Lys Asp Pro
 35 40 45

Glu Val Leu Glu Asn Gly Lys Phe Ala Ile Asp Glu His Asn Lys Glu
 50 55 60

Ala Gly Thr Lys Leu Glu Phe Lys Thr Val Val Glu Ala Gln Lys Gln
 65 70 75 80

Val Val Ala Gly Thr Asn Tyr Lys Ile Val Ile Lys Ala Leu Asp Gly
 85 90 95

Thr Ala Ser Asn Leu Tyr Glu Ala Ile Val Trp Val Lys Pro Trp Leu
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Lys Phe Lys Lys Leu Thr Ser Phe Arg Lys Leu Pro
 115 120

<210> 13

<211> 697

<212> DNA

<213> Coffea canephora

<400> 13

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cagaaaaaca tgggtgggtgg tgggtctaagc tctactgttc ctctcgcgac gtcaaccgctc	180
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gacacttact acatgcttgc cattaact caggatctta cgggcacaca ttgcgacgta	360
gcattgggtc gtgaaatata ggagagcaat ggtacttata gcctcaaata gtacaatcat	420
aacaataagt gaccacgcac tactcttgat cagctgagga tcaatgactt taattatata	480

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<210> 14

<211> 119

<212> PRT

<213> Coffea canephora

<400> 14

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Ser Ser Thr Val Asn Pro Lys Asp Pro His Val Ile Gln Ile Ala Gln
 35 40 45

Phe Ala Val Ala Asn Tyr Asn Ala Lys Ala Gly Thr Thr Val Val Trp
 50 55 60

Leu Asn Val Glu Tyr Gly Phe Trp Trp Ile Asp Asp Asp Thr Tyr Tyr
 65 70 75 80

Met Leu Ala Ile Lys Thr Gln Asp Leu Thr Gly Thr His Cys Asp Val
 85 90 95

Ala Leu Val Arg Glu Ile Ser Glu Ser Asn Gly Thr Tyr Ser Leu Lys
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Trp Tyr Asn His Asn Asn Lys
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<210> 15

<211> 1367

<212> DNA

<213> Coffea canephora

SEQUENCE.TXT

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<210> 16

<211> 359

<212> PRT

<213> Coffea canephora

<400> 16

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SEQUENCE.TXT

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 35 40 45
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 50 55 60
 Ala Asn Val His His Ile His Lys Val Asn Gln Lys Asp Lys Pro Tyr
 65 70 75 80
 Lys Leu Lys Leu Asn Ser Phe Ala Asp Met Thr Asn His Glu Phe Arg
 85 90 95
 Glu Phe Tyr Ser Ser Lys Val Lys His Tyr Arg Met Leu His Gly Ser
 100 105 110
 Arg Ala Asn Thr Gly Phe Met His Gly Lys Thr Glu Ser Leu Pro Ala
 115 120 125
 Ser Val Asp Trp Arg Lys Gln Gly Ala Val Thr Gly Val Lys Asn Gln
 130 135 140
 Gly Lys Cys Gly Ser Cys Trp Ala Phe Ser Thr Val Val Gly Val Glu
 145 150 155 160
 Gly Ile Asn Lys Ile Lys Thr Gly Gln Leu Val Ser Leu Ser Glu Gln
 165 170 175
 Glu Leu Val Asp Cys Glu Thr Asp Asn Glu Gly Cys Asn Gly Gly Leu
 180 185 190
 Met Glu Asn Ala Tyr Glu Phe Ile Lys Lys Ser Gly Gly Ile Thr Thr
 195 200 205
 Glu Arg Leu Tyr Pro Tyr Lys Ala Arg Asp Gly Ser Cys Asp Ser Ser
 210 215 220
 Lys Met Asn Ala Pro Ala Val Thr Ile Asp Gly His Glu Met Val Pro
 225 230 235 240
 Ala Asn Asp Glu Asn Ala Leu Met Lys Ala Val Ala Asn Gln Pro Val
 245 250 255
 Ser Val Ala Ile Asp Ala Ser Gly Ser Asp Met Gln Phe Tyr Ser Glu
 260 265 270

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SEQUENCE.TXT

Gly Val Tyr Ala Gly Asp Ser Cys Gly Asn Glu Leu Asp His Gly Val
275 280 285

Ala Val Val Gly Tyr Gly Thr Ala Leu Asp Gly Thr Lys Tyr Trp Ile
290 295 300

Val Lys Asn Ser Trp Gly Thr Gly Trp Gly Glu Gln Gly Tyr Ile Arg
305 310 315 320

Met Gln Arg Gly Val Asp Ala Ala Glu Gly Gly Val Cys Gly Ile Ala
325 330 335

Met Glu Ala Ser Tyr Pro Leu Lys Leu Ser Ser His Asn Pro Lys Pro
340 345 350

Ser Pro Pro Lys Asp Asp Leu
355

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